Phellodendron, a genus of trees new to the Malayan flora (Rutaceae)

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FOR SOME TIME I have been defeated in identifying a sheet from the Malay Peninsula with decussate, pinnate, exstipular leaves and choripetalous, 5–merous, male flowers. It would seem that the choice was so much narrowed by these characters, that identification would have been easy. And though it is now certain, that it belongs to *Phellodendron* of the Rutaceae, it remains still remarkable that the leaves of this genus do not show the distinct pellucid glands which are so typical for rutaceous plants. There are indeed minute, pin-like pellucid glands (crystal cells?) in the parenchyma but of essentially smaller size than is usual in Rutaceae. It is true that Sprague (Kew Bull. 1920, 231) and Engler (Pfl. Fam. ed. 2, 19a 1931, 298) mention the occurrence of a large pellucid gland near each of the shallow leaf-crenations, but this appears to be frequently indistinct in the sheets of the genus preserved in the Rijksherbarium. See also Blenk, Flora 67 (1884) 278.

Phellodendron burkillii n.sp.—Fig. 1.

Arbor, 18 m. alta, c. 35 cm. diam. Ramuli, foliorum raches, petioluli et inflorescentiae axes laterales primarii appresse puberuli. Folia 4–6-jugata, foliolis oblique ovato-oblongis ad sublanceolatis, acuminatis, acumine longo angusto saepe falcato, 6–10 × 2–3 cm., subtus in costae parte inferiore puberulis, ceterum glabris. Corymbus axibus conspicue decussatis, multiflorus, c. 10–12 cm. longus, 15–20 cm. latus. Flores subglabri. Calycis lobi. 1/3 mm., triangulares. Petala c. 2¾ × 1 mm., intus ad venam medianam pilis paucis retrorsis suffulta. Filamenta in parte inferiore pilis longis patentibus munita. Ovarium glabrum. Styli pilis erectis parcissime pubescentes.

Typus: KEP 78904, L.

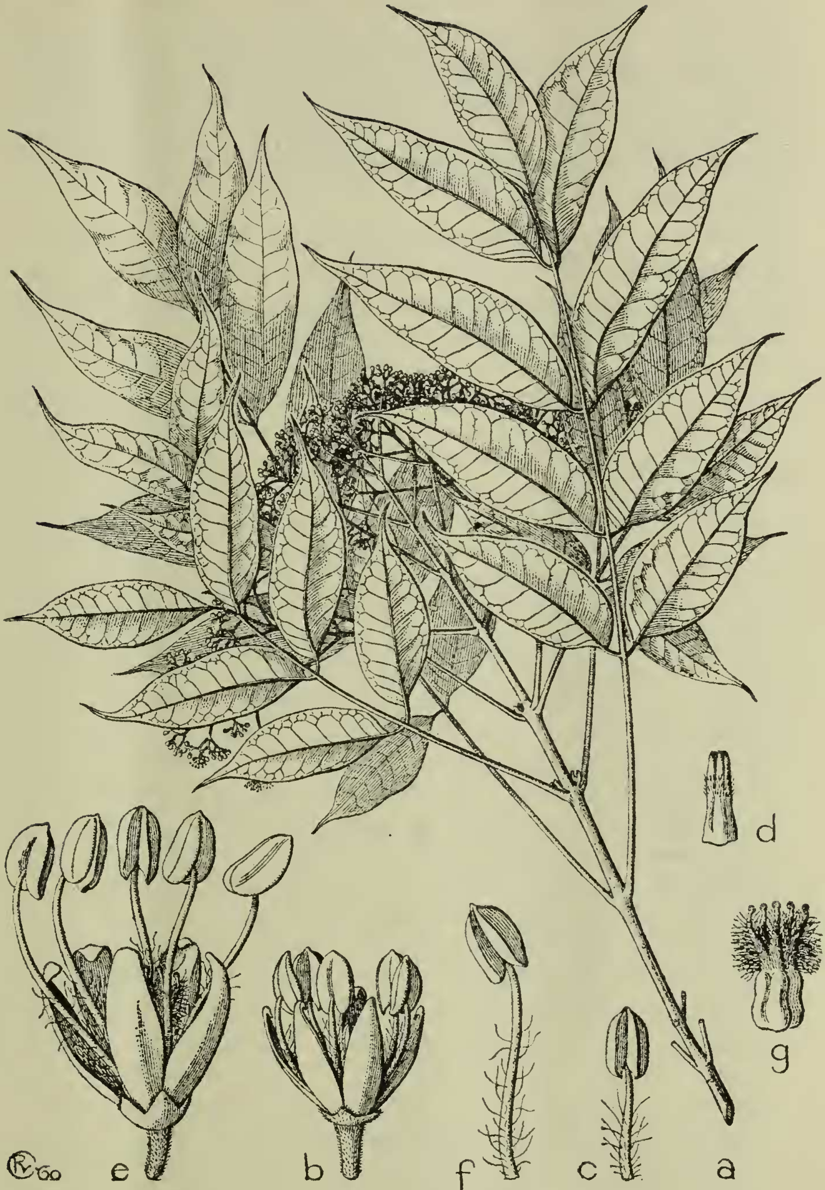
Tree 18 m. tall, 35 cm. diam. Twigs with very few lenticels, pithy, as the petioles, leaf-rachis, and inflorescential stalks puberulous, terete, but flattened at the nodes. Leaves decussate, with

4–6 pairs of leaflets, c. 20–30 cm. long; leaflets c. 4–6 pairs, dull, ± glaucous underneath, obliquely ovate-oblong to sublanceolate, long- and narrow-, often falcate-acuminate, 6–10 by 2–3 cm, base cuneate and on the acroscopical side often ± rounded, ultimate base short-decurrent into the petiolule; nerves c. 6–8 pairs, inconspicuous, as the very dense venation not or obscurely prominent; margin obsoletely crenate, in the crenations often an obsolete, pellucid dot; petiole 3–6 cm; petiolules c. 3 mm. Terminal corymb wide (c. 15–20 cm.), c. 10–12 cm. high, richly branched and with numerous flowers. Calyx c. 1 mm. diam., ½ mm. high, the lobes acute-deltoid. Mature buds broad-elliptic almost globular, 2 mm. long. Petals oblong-elliptic, the margins very narrowly imbricate, c. 2½ times as long as wide, boat-shaped, c, 2¾ by 1 mm., tip thickened, retrorse, glabrous but for some appressed, retrorse hairs on the midrib within. Stamens 5, erect in bud, the filaments considerably lengthening during anthesis and becoming longer than the anthers (c. 2–2½ mm.), the lower half with scattered, patent, long hairs; anthers free in the lower half and ± sagittate, basifixed, acute-oblong, c. 1¾ mm. long. Ovary in ♂ rudimentary, 5-angled, c. ½ mm. high, glabrous, with 5 erect, appressed styles ½ mm. high, with a few appressed-erect hairs.

MALAY PENINSULA. Kedah: Enggang Forest Reserve, Sik, KEP 78904 (L, type, KEP, K, SING, distributed as Micromelum pubescens Bl.), low-lying ground, bark smooth, grey-green, flowers greenish-white, July 12, 1956.

The closest ally of this species seems to be *P. macrophyllum* Dode from East Szechuan, China (Bull. Soc. Bot. Fr. 55, 1908, 648) which is, however, clearly specifically distinct, as appeared from an examination of the type which was kindly loaned to me by the Director of the Paris Herbarium. The differential characters are that it has 2–4-jugate leaves (in the type sheet 2-jugate); leaflets large, 10–15 (–20) by 5–8 (–9) cm., broad-elliptic, abruptly acuminate, pubescent beneath on the main rib, venation and intervenium, with a much coarser venation than in *P. burkillii,* without marginal glandular dots, but with very numerous dots of microscopic size and scattered large pellucid dots (as yet unknown in the genus); inflorescence with very thick, lenticellate dark-coloured peduncle and axis; flowers very dense; mature buds 3 mm.; calyx 1 mm. high. Petals 3 by 1 1/3 mm. Styles patent long-villose. Fruit globular, 10 by 9 mm.

The genus is a truly East Asian—one of Sino-Japanese distribution, north to Manchuria, south to Formosa.



Phellodendron burkillii Steen. a, Flowering twig, × 2/5. b, flower. c, stamen. d, pistil, all × 6 (after KEP 78904, L.). —*Phellodendron macrophyllum* Dode. e, flower. f, stamen. g, pistil, all × 6 (after Farges 1284, P.).

If such temperate to subtemperate ligneous genera occur in the South-east Asian tropics they are generally found in the montane zone, as for example in *Pentaphylax, Osmanthus, Camellia, Anneslea, Distylium, Schoepfia, Pistacia* (in Luzon), etc. This is not always the case, as of *Acer,* which belongs in this group, two lowland localities have been recorded in addition to dozens in the montane zone.

There is as far as I know one temperate to subtemperate ligneous genus which only occurs in the lowland in Malaya and that is *Pistacia malayana* Henderson; this shows an ecologically similar behaviour as this new record of *Phellodendron.*